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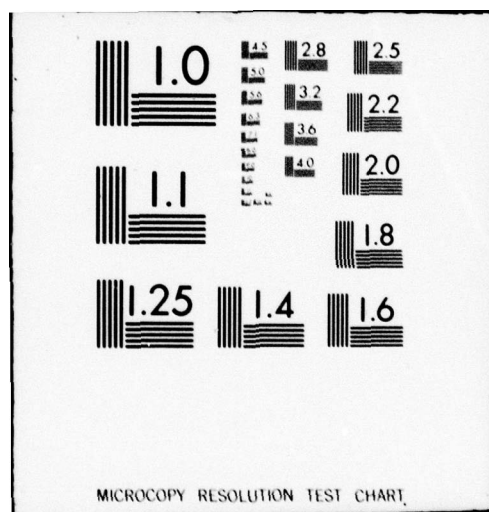
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The purpose of this study was to replicate, with female respondents, a 1975 survey of male preservice substance abuse and its correlates. The Navy's Drug Experiences Questionnaire (DEQ) was administered in June 1976 to 519 women at Recruit Training Command, Orlando, FL. Responses were compared to those of the 1975 male sample. Results showed that female and male preservice drug experiences were similar. No significant differences were found in the proportions of female and male (49.8 vs. 47.0%, respectively) nondrug users,		

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marijuana-only users (22.2 vs. 25.8%), and other drug users (28.0 vs. 27.2%). However, upon analyzing the "other drug" category in more detail, significantly more men than women were found to have used hallucinogens, such as LSD, STP, and DMT. The relationships between substance abuse and racial or ethnic membership, age, high school grades, level of education, geographic origin, size of hometown, and preservice delinquency were similar for both sexes. However, frequency of drunkenness during the previous year was significantly higher for men than for women.

→ Despite the finding that patterns of preservice substance abuse of women and men entering the Navy are similar, it is difficult to predict what effect the enlistment of more women will have on the service's drug problems. Further research with samples of both sexes to determine the extent of substance abuse during the first enlistment is recommended. ↗

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FOREWORD

This study was designed to meet the needs of the Navy Human Resources Management Support System by monitoring drug and alcohol patterns among naval personnel. The primary purpose was to determine preservice drug and alcohol experiences of young women entering the Navy. It was conducted in response to a request from the Director, Navy Drug Abuse Control Program, to supplement data obtained from male recruits over a 5-year period. Such information is requisite to the development of strategies to reduce the impact of substance abuse on military effectiveness.

The cooperation of Recruit Training Command, Orlando, FL, in administering the questionnaire is gratefully appreciated.

J. J. CLARKIN
Commanding Officer

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SUMMARY

Problem

During the past decade, drug usage has been on the increase throughout American society, particularly among those 18 to 25 years old. Since most of the Navy's recruits fall within this age group, it has taken a particular interest in this problem. Previous research has suggested that preservice drug usage provides the most valid indication of subsequent involvement with drugs while in the service. Thus, studies have been conducted to assess the magnitude of, and trends in, self-reported preservice drug use among male naval recruits. Because of the increasing numbers of women entering the Navy, it is necessary to obtain similar data on female recruits. If the Navy is to effectively manage problems related to drug use, it must be aware of drug usage patterns and attitudes among all personnel.

Purpose

The purpose of the present study was to determine the magnitude and characteristics of self-reported preservice drug use among female naval recruits by replicating, using female respondents entering the Navy in 1976, a 1975 survey of male preservice drug abuse and its correlates.

Approach

The Drug Experiences Questionnaire (DEQ) used in the previous study was administered to 519 female recruits at the Recruit Training Command, Orlando, FL. The DEQ includes items concerned with drug usage, background characteristics, preservice delinquency, and cigarette/alcohol usage. Female responses were compared with those from the male sample. Also, drug usage rates were compared with those for an hypothesized 1976 male sample projected from earlier rates.

Findings

Preservice drug experiences of women entering the Navy in 1976 were similar to those of men entering in 1975. No significant differences were found in the proportions of female and male nondrug users (49.8 vs. 47.0%, respectively), marijuana-only users (22.2 vs. 25.8%), or other drug users (28.0 vs. 27.2%). However, upon analyzing the other drug category in more detail, significantly more men than women were found to have used hallucinogens, such as LSD, STP, and DMT. The relationships between substance abuse and racial or ethnic membership, age, high school grades, level of education, geographic origin, size of hometown, and preservice delinquency were similar for the sexes. However, the reported frequency of drunkenness during the previous year was significantly higher for men than for women.

Conclusions

Some caution should be introduced before concluding that the incidences of preservice drug usage of male and female recruits are similar. First the data were gathered during 1976 for the women and during 1975 for the

men; thus, since male drug usage has significantly increased over the years, it may be inferred that the 1976 female sample is about a year behind the 1975 male sample in drug experiences. Second, current legislation could amend the statutory restrictions on the utilization of women, thus ending the advantageous ratio of applicants to openings and the selection of only the most highly qualified. Under these circumstances, women may more closely approximate men on background selection variables, and the proportion of women involved with drugs may rise.

Recommendation

An investigation should be conducted of drug and alcohol abuse during the first enlistment, using samples of both sexes.

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INTRODUCTION

Problem

During the past decade, drug usage has been on the increase throughout American society, particularly among those 18 to 25 years old (National Commission, 1973; National Institute on Drug Abuse, Note 1). Since most of the Navy's recruits are within this age group, it has taken a special interest in the drug problem. Several studies have been conducted to examine not only the pattern of drug abuse among persons in the service but also preservice drug usage among Navy recruits (Gilbert & Mazzuchi, 1973; Nail, Gunderson, & Arthur, 1974; Helms, 1975; Plag & Goffman, 1972; Kolb, Nail, & Gunderson, 1975; Crawford, Thomas, & Thomas, 1976). Most of the studies have either excluded females from analysis or incorporated their responses with those of the males without addressing the possibility of sex differences in drug usage patterns. As Suffet and Brotman (1976) said, "Despite the vast amount of drug research done by social scientists in the past 10 years, relatively little attention has been given to assessing the distinctive features of drug use by females" (p. 20).

For at least two reasons, it is believed that Navy women have added little to the Navy's growing drug problem. First, until very recently, they comprised less than 3 percent of active duty Navy personnel. Second, based on the findings of alcohol-use surveys (Cahalan & Cisin, 1975), it has been generally assumed that females are less involved in drug usage than are their male counterparts. Based on that belief, Navy managers anticipate that the Navy's drug and alcohol problems will lessen as the proportion of women increases, thus ameliorating the concomitants of substance abuse. Specifically, they expect that fewer people will be assigned to rehabilitation centers, resulting in a reduction in (1) treatment personnel and facilities, (2) lost time due to nonproductive periods on the job or being sick in quarters, and (3) the cost of apprehending and disciplining abusers. However, because of the current burgeoning population and expanding role of Navy women, the assumption that they are minimally involved in substance abuse must be critically evaluated.

Since attitudes toward drug usage, as well as the regulations and laws restricting it, are continually changing, drug usage patterns must be monitored accordingly. The use of marijuana, for example, has increased both in popularity and acceptability, and fewer young people today believe that it is harmful to the user (Johnston, Bachman, & O'Malley, 1976). Several state legislatures have decriminalized marijuana possession; a number of others are considering such action. In fact, the increase in the use of marijuana, combined with the more lenient treatment of marijuana offenders, has prompted the Department of Health, Education, and Welfare to say that marijuana is "more than a fad and may well prove to be an enduring cultural pattern in the United States" (Marijuana and Health, 1976, p. 10).

Marijuana is not the only drug gaining acceptance in our society. For example, the possession of cocaine has become a measure of status in some circles (Grinspoon & Bakalar, 1977). If the Navy is to effectively manage problems related to drug use, it must be aware of changing drug usage patterns and attitudes among Navy personnel, including women.

Background

Male-Female Differences in Drug Usage Patterns

Recently, researchers have approached the problem of drug usage more comprehensively than did their predecessors. Many have reviewed the innumerable isolated surveys and have attempted to integrate and summarize the sometimes discrepant findings (e.g., Spevack & Pihl, 1976; Suffet & Brotman, 1976). Others have conducted national surveys (Abelson & Atkinson, 1975; Abelson & Fishburne, 1976; Johnston et al., 1976; Josephson, 1974) to ask representative samples of the American population about the use of drugs. Most important for this study, the issue of possible male-female differences in drug usage patterns is being addressed.

Spevack and Pihl (1976) reviewed a number of studies conducted from 1968 to 1972 examining drug usage among high school and college students. Of the 18 high school studies, 13 indicated that proportionately more males than females reported the use of drugs. Of the 28 college studies, 7 reported more male than female drug users, 7 reported more female than male users, and the remaining 14 did not compare males and females.

Suffet and Brotman (1976) reviewed drug studies conducted before 1974. The populations varied from junior high school students to adult addicts admitted to federal drug treatment centers. Generally, males reported greater involvement with drugs than did females. Also, males were more likely to use illegal drugs such as marijuana, cocaine, and hallucinogens,¹ while females "preferred" drugs such as barbiturates and amphetamines. Suffet and Brotman (1976) do not distinguish between legal and illegal use of these drugs. When asked what substance they used to cope with stress, males were more likely to report the use of alcohol; and females, psychotherapeutic drugs.

A national survey of high school seniors on lifestyles and values, conducted by Johnston et al. (1976), included questions on activities and attitudes related to drug usage. The results indicated that males are more likely than females to have used marijuana and hallucinogens. Similar proportions of females and males reported the use of alcohol, barbiturates, amphetamines, and heroin.

Two national household surveys of drug usage among American adults (defined as those over 18) and youths (defined as those between 12 and 17 years old) have been conducted (Abelson & Atkinson, 1975; Abelson & Fishburne, 1976). When results for these surveys were analyzed for sex differences, it was found that about twice as many adult men as women had used marijuana (29 vs. 14%). Among youth, sex differences were much less marked (26 vs. 19%). Unfortunately, these surveys did not specifically examine sex differences in drug usage patterns among persons from 17 to 21 years of age, the age group appropriate for comparison to Navy recruits.

¹For purposes of this study, the term "hallucinogen" is used to refer to two drug groups: (1) LSD, STP, DMT and (2) peyote, psilocybin, mescaline.

These studies suggest that, in general, males are more likely to report the use of marijuana and hallucinogens; and females, of psychotherapeutic drugs such as amphetamines and barbiturates. Finally, there tends to be fewer sexual differences in drug usage among youths (individuals between 12 and 17 years old) than among adults (individuals over 18 years old).

Female Drug Use

Based on a review of social science drug research, Suffet and Brotman (1976) report a paucity of research directed specifically at female drug use. Most studies that have included both males and females have treated sex as a simple background variable. Suffet and Brotman maintain that merely reporting sex differences is of little value if no attempt is made to explain them; that is, theories must be developed to connect patterns of drug use to the status associated with being female or male. They also contend that illicit drug use by females may increase as women gain social equality with men and greater freedom in their lifestyles: "In short, as women rebel against the old double standard, which denied them certain personal freedoms granted to men, we will begin to see a greater parity in rates of male and female drug use, especially among teenagers and young adults" (Suffet & Brotman, 1976, p. 31). The results of some of the studies discussed above suggest that such a change is already occurring.

Steffenhagen, McAree, and Nixon (1972) examined sociodemographic and social psychological correlates of drug use among college females. All subjects in the study were volunteers, so no indication of the extent of female drug usage was obtainable. Of the 37 variables investigated for differences between drug users and nonusers, 10 were found to be statistically significant. For example, they found that drug users (1) were more likely to have smoked cigarettes than nonusers, (2) had a higher frequency of cigarette use than nonusers, (3) had all tried alcohol, which was not true for nonusers, and (4) had begun to use alcohol at an earlier age than had nonusers.

Background Characteristics of Military Drug Users

Considerable research has focused on demographic and background correlates of drug use in the civilian sector (see, for example, Braucht, Brakarsh, Follingstad, & Berry, 1973). Since the findings from most civilian and military studies are largely parallel, this section addresses characteristics of military drug users.

Rates of overall drug usage among black and white military personnel appear to be similar, although most studies report that blacks have a greater involvement with narcotics than whites (Fisher, 1972; Greden & Morgan, 1972; Callan & Patterson, 1973; Nail, Gunderson, & Arthur, 1974).

Previous research has suggested that preservice drug usage provides the most valid indication of subsequent involvement with drugs while in the service (Kolb et al., 1975; Fisher, 1972). Thus, Crawford et al. (1976) assessed the magnitude of, and trends in, self-reported preservice drug use among male naval recruits entering the Recruit Training Command, San Diego during the 1971-1975 time frame. They developed and administered

a specially designed Drug Experience Questionnaire (DEQ) under anonymous conditions to recruits during the fall of each year. The DEQ contained nine items assessing preservice illicit drug involvement, one of which addressed the use of two nonexistent drugs to provide an estimate of invalid responses. Other items focused on background characteristics, preservice delinquent experiences, and rates of alcohol and tobacco usage.

Crawford et al. divided each yearly sample into one of three groups, based on the degree of reported preservice involvement with drugs: (1) Nondrug Users, (2) Marijuana-only Users, and (3) Other Drug Users. They found that:

1. The percentage of preservice Nondrug Users decreased each year from a high of 58 percent in 1971 to a low of 47 percent in 1975. This change was due largely to increases in percentages of Marijuana-only Users.

2. Marijuana was the most commonly used drug over the 5-year period, with 51 percent of the recruits in 1975 reporting some use in the previous 6 months.

3. Among specific drugs, the percentages of preservice users of marijuana, amphetamines, and barbiturates increased significantly between 1971 and 1975. However, the largest increase was in marijuana usage, both in percentage of users and the intensity of involvement. Overall, most Other Drug Users were considered to be "experimenters."

4. Strong relationships were found between drug involvement and other factors addressed in the questionnaire. These relationships are cited below and in other sections of this report.

Studies suggest that both military and preservice drug use (1) are associated with cigarette and alcohol use, (2) decrease with age and education, and (3) are least likely among individuals from rural areas (Crawford et al., 1976; Fisher, 1972; Greden & Morgan, 1972; Gilbert & Mazzuchi, 1973; Weybrew & Noddin, 1973; U. S. Department of Health, Education, and Welfare, 1974). In addition, drug usage has been associated with antisocial and antimilitary behavior. Plag and Goffman (1972) found that Navy recruits with a history of drug use were more likely than other recruits to have been sent to a reform school, jail, or detention home. Crawford et al. (1976) found that preservice drug users were more likely than nonusers to report that they had been booked, shoplifted, or had traffic tickets. Drug abuse among Army personnel also has been found to be related to being booked, being in jail, receiving traffic violations, and having a history of disciplinary actions (Greden & Morgan, 1972; Reinstein, 1972). Almost every study of demographic factors associated with drug usage has focused entirely on the male drug user. The female in the military who has a history of drug use generally has been ignored.

PROCEDURE

Instrument

The Drug Experiences Questionnaire (DEQ), developed by Crawford et al. (1976), was used to collect the data for this study. As indicated previously, the DEQ includes items addressing drugs, including two that are nonexistent; background characteristics; preservice delinquency; and alcohol and cigarette usage. A copy of this questionnaire is provided in the appendix. Since questions about drug usage may be viewed as threatening or as an invasion of privacy, the questionnaire is administered under anonymous conditions.

Sample

It was determined that the sample should include at least 500 female recruits. No selection criteria were applied in choosing the sample. Instead, instructors at the Recruit Training Command, Orlando FL--where all female recruits are sent for training--were instructed to administer the DEQ to all recruits entering in June 1976 until a sample of at least 500 females had been surveyed.

The initial sample comprised 519 female recruits. However, 11 (2%) of these recruits professed that they had used the nonexistent drugs, compared to 3 percent of the males in the Crawford et al. study. These recruits were eliminated from the sample; thus, the data analyses were based on 508 respondents.

Data Analysis

The proportions of women choosing the alternative responses to each item were determined. On the items of more critical interest to the Navy, comparisons were made between responses of the female sample used in this study and the 1975 male sample (N = 1252) used in the Crawford et al. study. Chi-squares or z ratios were computed, as appropriate, to test the statistical significance of the differences.

Since results of the earlier study of male recruits showed that their drug usage, especially of marijuana, had increased steadily from 1971 to 1975, it would have been misleading to compare drug use of females in 1976 with that of males in 1975. Thus, the amount of drug involvement of an hypothesized 1976 male sample was projected statistically from the 1971-1975 rates.

As in the previous study, the sample was divided into three groups, based on the type of reported drug involvement, to facilitate comparison with the data obtained from male recruits:

1. Nonusers--individuals reporting no drug usage during the preceding 6 months.
2. Marijuana-only Users--individuals reporting the use of marijuana, but no other drug, during the preceding 6 months.
3. Other Drug Users--individuals reporting the use of any drug other than or in addition to marijuana during the preceding 6 months.

RESULTS AND DISCUSSION

Drug Usage Categories

The proportion of 1975 male and 1976 female recruits categorized into each of the three drug groups is presented in Table 1. As shown, the pattern of usage is quite similar. Almost half of both sexes were Nonusers, although a greater percentage of females than males fell into this category. A greater proportion of both women and men reported using drugs other than or in addition to marijuana than reported using only marijuana. The differences between the distributions for women and men failed to achieve statistical significance.

Table 1

Distribution of Samples in Drug Usage Categories

Sex	Drug Usage Category						χ^2
	Nonusers		Marijuana-only Users		Other Drug Users		
	N	%	N	%	N	%	
Female	253	49.8	113	22.2	142	28.0	2.52
Male	588	47.0	323	25.8	341	27.2	

Table 2 compares the preservice involvement of 1976 females and 1975 males with the specific drugs mentioned in the questionnaire. As shown, the proportions for men and women were similar for marijuana, amphetamines, barbiturates, cocaine, opium/codeine, and heroin. Significantly more males than females, however, reported using hallucinogens (11 vs. 7% for both hallucinogenic drug groups). These results closely parallel those of Johnston et al. (1976), who found that similar proportions of female and male students reported involvement with barbiturates, amphetamines, and heroin, but that males were more likely to have used marijuana and hallucinogenic drugs. Table 2 also compares projected drug involvement of hypothesized 1976 male recruits, which was determined statistically from male rates for 1971 through 1975, with the actual involvement of 1976 female recruits. No statistical test is designed to examine differences of this nature; however, the following comments are appropriate:

1. The disparity between male and female use of marijuana has increased by 3 percent. If an actual sample of 1976 male recruits had been surveyed, it is likely that a significant difference in male and female preservice use would have been found. Such results would have confirmed the findings of Johnston et al. (1976) and the assertion by NIDA (1975) that male use of marijuana generally exceeds that of females.

2. Although male use of hallucinogens has decreased slightly, it is still higher than that of females. This appears to substantiate the difference in the use of hallucinogens.

3. The disparity between male and female use of opium and codeine has increased, with females using almost twice as much as males.

4. The use of other drugs shown remains about the same for both sexes.

Table 2

Specific Drugs Used by Samples
During Last 6 Months Before Enlistment

Drug	Percentage of Recruits			z Ratio of Difference (1) and (2)
	1976 Females (N = 508) (1)	1975 Males (N = 1252) (2)	1976 Males (Projected) (3)	
Marijuana	47.2	51.0	54.0	1.44
Amphetamines	20.7	19.1	20.6	0.76
Barbiturates	14.2	14.0	15.4	0.11
Hallucinogens:				
LSD, STP, DMT	6.5	11.4	11.1	3.12**
Peyote, Psilocybin, Mescaline	7.3	10.6	11.1	2.12*
Cocaine	8.7	8.9	8.8	0.10
Opium	6.1	5.5	3.5	0.49
Heroin	2.4	2.1	1.7	0.39

*p < .05

**p < .01

Data concerning the frequency of drug usage are presented in Table 3. Again, results for female and male recruits are very similar. For marijuana, the most common frequency category was 20 times or more in the past 6 months, with proportionately more males than females reporting such usage. A very different pattern emerges for the other drugs. In these instances, the table shows declining proportions for increasing usage categories, indicating that the majority of both male and female recruits have been "experimenting."

Table 3
Percentage Distribution of Samples in
Drug Frequency Categories

		Percentages within Drug Frequency Category					
Drug	Sex	Never	1 or 2 times	3 to 9 times	10 to 20 times	20+ times	χ^2
Marijuana	Female	52.8	13.2	8.3	5.9	19.8	7.798
	Male	49.0	12.5	7.2	5.3	26.1	
Amphetamines	Female	79.3	6.9	5.5	3.2	5.1	2.504
	Male	80.9	6.7	5.8	3.1	3.5	
Barbiturates	Female	85.8	6.5	4.5	1.6	1.6	0.651
	Male	86.0	7.1	3.9	1.6	1.4	
Hallucinogens:							
LSD, STP, DMT	Female	93.5	4.7	1.0	0.8	-	14.261*
	Male	88.6	6.4	3.5	0.9	0.6	
Peyote, Mescaline, Psilocybin	Female	92.7	3.5	2.0	1.0	0.8	4.744
	Male	89.4	5.2	3.2	1.1	1.1	
Cocaine	Female	91.3	5.1	2.6	0.4	0.6	2.641
	Male	91.1	4.7	2.5	1.2	0.5	
Opium Codeine	Female	93.9	4.1	1.4	0.2	0.4	2.160
	Male	94.5	3.4	1.2	0.6	0.3	
Heroin	Female	97.6	2.0	0.4	-	-	2.593
	Male	97.9	1.3	0.6	0.1	0.2	

*p < .01

The question arises of how much of the marijuana usage is attributable to those in the Other Drug category. Table 4 reveals that the majority of women and men in this group reported having used marijuana 20 times or more, with males exhibiting significantly greater involvement. Conversely, those identified as Marijuana-only Users appear to have used the drug on relatively few occasions.

Table 4
Percentage Distribution of Drug Users in
Marijuana Frequency Categories

Group	Sex	Percentages within Marijuana Frequency Category					χ^2
		Never	1 or 2 times	3 to 9 times	10 to 20 times	20+ times	
Other Drug Users	Female	10.6	8.5	9.2	14.8	57.0	10.300*
	Male	7.3	7.6	6.2	7.9	71.0	
Marijuana- only Users	Female	-	48.7	25.7	8.0	17.7	5.955
	Male	-	40.2	21.4	12.1	26.3	

*p < .05

Characteristics Associated with Preservice Drug Involvement

Demographic

Preservice drug involvement of 1976 female and 1975 male recruit samples are compared in Table 5 and discussed in the following paragraphs.

Racial/Ethnic Group. As shown in Table 5, among male recruits, the overall percentage of Nonusers in the White, Black, and Chicano subgroups varied from 44.0 to 50.6 percent, and was considerably higher—84.5 percent—for the Orientals. Among female recruits, the proportion of Nonusers is more variable, ranging from 36.4 percent for Chicanos to 62.5 percent for Orientals. However, the number of women in the Chicano and Oriental subgroups was quite small, making comparisons impractical. The percentages of Black and White female recruits who reported the use of drugs were more similar than those for the other subgroups, although more White than Black females were Nonusers (50.5 vs. 41.2%). However, Black females were more likely to be Marijuana-only Users; and White females, Other Drug Users. This finding was also true, but to a lesser extent, among Black and White male recruits.

Table 5
Preservice Drug Involvement by Demographic Characteristics

Item	Sex	Percentage of Sample	N	Percentages within Drug Usage Category			χ^2
				Nonusers	Marijuana-only Users	Other Drug Users	
Racial/Ethnic Group							
White	Female	79.4	402	50.5	21.6	27.9	5.795
	Male	78.1	976	44.0	26.7	29.3	
Black	Female	12.5	63	41.2	33.3	25.4	1.287
	Male	7.0	87	50.6	28.7	20.7	
Chicano	Female	2.2	11	36.4	36.4	27.3	1.127
	Male	6.2	77	48.1	22.1	29.9	
Oriental	Female	1.6	8	62.5	12.5	25.0	3.066
	Male	4.6	58	84.5	8.6	6.9	
Other	Female	4.3	22	68.2	-	31.8	6.487*
	Male	4.1	51	56.9	23.5	19.6	
Age Group							
17 or under	Female	5.0	25	36.0	24.0	40.0	0.474
	Male	13.2	165	36.4	29.7	33.9	
18	Female	20.9	105	47.6	25.7	26.7	0.700
	Male	45.8	572	45.5	29.7	24.8	
19	Female	25.0	126	41.3	32.5	26.2	6.261*
	Male	23.3	233	48.1	20.6	31.3	
20	Female	13.5	68	51.5	17.6	30.9	1.890
	Male	9.2	115	41.7	24.3	33.9	
21 or older	Female	35.6	179	58.7	13.4	27.9	4.016
	Male	13.2	165	65.5	15.8	18.8	
High School Grades Achieved							
As and Bs	Female	44.8	226	52.7	19.9	27.4	0.765
	Male	29.3	367	52.9	22.3	24.8	
Bs and Cs	Female	49.7	251	47.4	25.1	27.5	0.005
	Male	55.0	688	47.7	25.0	27.3	
Cs, Ds, and Below	Female	5.6	28	50.0	17.9	32.1	3.962
	Male	15.7	196	33.7	34.7	31.6	
Educational Level							
Some High School	Female	4.8	24	50.0	4.2	45.8	4.107
	Male	11.4	142	45.1	21.1	33.8	
High School Graduate	Female	61.0	308	49.7	26.0	24.3	1.634
	Male	71.8	895	45.5	28.4	26.1	
Some College or Junior College Graduate	Female	30.3	153	47.7	20.3	32.0	1.442
	Male	14.9	186	53.2	20.4	26.3	
College Graduate or Higher	Female	4.0	20	70.0	5.0	25.0	0.015
	Male	1.9	23	69.6	4.3	26.1	

*p < .05

Table 5 (Continued)

Item	Sex	Percentage of Sample	N	Percentages within Drug Usage Category			χ^2
				Nonusers	Marijuana-only Users	Other Drug Users	
Geographic Area							
West	Female	22.3	112	49.1	20.5	30.4	2.235
	Male	53.3	665	44.4	27.2	28.4	
Northeast	Female	20.3	102	39.2	28.4	32.4	0.915
	Male	4.2	52	42.3	32.7	25.0	
South	Female	23.1	116	53.4	14.7	31.9	4.408
	Male	18.4	229	44.1	23.6	32.3	
Midwest	Female	29.4	148	52.7	25.7	21.6	1.721
	Male	17.1	214	45.8	28.5	25.7	
Other	Female	5.0	25	56.0	20.0	24.0	6.206*
	Male	7.0	87	80.5	9.2	10.3	
Size of Hometown							
Ranch or farm	Female	13.7	69	43.5	30.4	26.1	1.994
	Male	15.9	199	50.3	22.1	27.7	
Small town less than 25,000	Female	31.6	159	52.2	18.2	29.6	4.644
	Male	25.9	323	51.1	26.0	22.9	
City 25,000 to 100,000	Female	22.9	115	49.6	20.0	30.4	1.778
	Male	26.9	336	46.1	26.2	27.7	
City 100,000 to 500,000	Female	16.3	82	51.2	23.2	25.6	3.508
	Male	16.7	209	39.2	30.1	30.6	
City over 500,000	Female	15.5	78	50.0	25.6	24.4	0.764
	Male	14.6	182	46.7	23.6	29.7	

*p < .05

Among White recruits, significantly more females than males were Nonusers (50.5 vs. 44%, $z = 2.201$, $p < .05$). Among Black recruits, the reverse was true: The percentage of Black males who were Nonusers was larger than that of Black females, although this difference was not statistically significant.

Age Group. Consistent with findings of earlier research, younger recruits reported the greatest drug involvement. Sixty-four percent of male and female recruits 17 or under reported having used drugs in the past 6 months, compared to 35 and 41 percent for males and females respectively in the 21 or older group. Among females, the proportion of Marijuana-only Users increased with age until age 19, where the sole significant difference between sexes was found, and then sharply declined to below 14 percent. The peak of Marijuana-only usage among males was in the 17-and-under and 18 age groups.

The highest proportion of Other Drug Users was among recruits 17 years or under, with females displaying more involvement than males. Approximately 28 percent of the women in the other age groups were classified as Other Drug Users. Among males, however, the percentage of Other Drug Users dropped below that of females in the 18 age group, rose steadily in the 19 and 20 age groups, and dropped sharply to below 19 percent in the 21 or older age group.

High School Grades Achieved. The proportion of female Nonusers was fairly stable across grades, whereas males displayed a consistently negative relationship between grades and drug involvement. The distributions failed to yield a significant chi-square, however. One noteworthy sex difference in the table is the high proportion of females who earned As and Bs.

Educational Level. Previous research among military personnel has consistently shown that, as the level of education increases, drug involvement decreases. The responses of the Navy recruits tended to follow this trend. The proportion of recruits who reported the use of drugs declined as the level of education increased, from about 50 percent of those with some high school education to 30 percent of the college graduates. None of the differences between the sexes was significant.

Geographic Area. Among the women, drug usage was reported most often by the recruits from the Northeast, a finding consistent with that reported by Fisher (1972). The greatest disparity between the sexes (and the only significant difference) was observed for recruits from "Other" regions (Alaska, Hawaii, the Philippines, and other overseas areas), wherein a considerably greater proportion of females than males reported drug usage in the 6 months before they entered the Navy (44.0 vs. 19.5%).

Size of Hometown. Past research on drug use among military personnel and on marijuana use nationwide has pointed to a positive relationship between size of hometown and the degree of drug involvement. However, the pattern of drug involvement among female recruits did not conform to this pattern. The greatest proportion of female Marijuana-only Users came from ranches and farms, and the greatest proportion of Other Drug Users came from cities of 25,000 to 100,000. None of the sexual differences was statistically significant.

Preservice Delinquency

The data in Table 6 support the findings of Plag and Goffman (1972) that drug users tend to display antisocial behavior. The proportion of females who had been booked, had shoplifted, or had been issued a traffic ticket was significantly lower than the proportion of males. However, members of both sexes who exhibited such behaviors were involved with drugs to a similar degree; that is, there were no significant differences between the sexes when delinquency was held constant. Having been booked was clearly related to drug usage, especially the use of drugs other than or in addition to marijuana. This trend was also evident among those who admitted having shoplifted and having received more than two traffic citations.

Cigarette/Alcohol Usage

Two of the most frequently used addictive agents in the United States are nicotine and alcohol. For this reason, the relationship between cigarette/alcohol usage and illegal drug usage among female and male recruits was examined. Results are provided in Table 7.

Cigarette Usage. As noted previously, drug usage has often been associated with smoking cigarettes. However, as shown, responses of female recruits did not show the linear relationship between drug usage and cigarette smoking that was demonstrated by the males. The smallest proportion of both female and male drug users was among the nonsmokers. However, the greatest proportion of female drug users was among those who smoked one to three packs of cigarettes weekly; and the greatest proportion of male drug users, among those who smoked eight or more.

Steffenhagen et al. (1972) reported that female drug users were more likely than female nonusers to have smoked cigarettes, which is supported by the present findings. The relationship they reported between drug use and frequency of cigarette use is seemingly not supported by the data from the 1976 female recruits. However, the response categories used in the two surveys are not directly comparable: Steffenhagen et al. used three very broad categories; and this survey, five fairly specific categories.

For both male and female recruits, cigarette use appears to be related more closely to the use of drugs other than or in addition to marijuana. Women who smoked 1 to 3 packs a week, however, were the exception; that is, they were almost equally divided between the two drug usage categories.

Table 6
Preservice Drug Involvement by Preservice Delinquency

Item	Sex	Percentage of Sample	N	Percentages within Drug Usage Category			^a χ ²	^b χ ²
				Nonusers	Marijuana- only Users	Other Drug Users		
Had Been Booked								
Yes	Female	8.7	44	27.3	13.6	59.1	3.982	39.820*
	Male	21.4	267	28.5	26.2	45.3		
No	Female	91.3	463	52.1	23.1	24.8	1.630	
	Male	78.6	983	52.0	25.6	22.4		
Had Shoplifted								
Yes	Female	47.2	238	31.5	26.9	41.6	6.251	14.757*
	Male	57.3	712	37.2	30.1	32.7		
No	Female	52.8	266	66.2	18.4	15.4	2.902	
	Male	42.7	530	60.4	20.0	19.6		
Had Been Issued Traffic Tickers in Previous 2 Years								
3 or more	Female	3.7	19	42.1	15.8	42.1	1.090	102.433*
	Male	16.1	202	36.1	26.7	37.1		
1 or more	Female	23.6	120	42.5	19.2	38.3	4.901	
	Male	36.1	451	44.1	26.8	29.0		
None	Female	62.4	317	51.7	23.7	24.6	0.242	
	Male	41.7	522	52.3	24.5	23.2		
Don't Drive	Female	10.2	52	57.7	23.1	19.2	0.173	
	Male	6.1	76	55.3	26.3	18.4		

^aGender comparison.

^bOffense response comparison.

*p < .01

Table 7
Preservice Drug Involvement by Cigarette/Alcohol Usage

Item	Sex	Percentage of Sample	N	Percentages within Drug Usage Category			χ^2 ^a	χ^2 ^b
				Nonusers	Marijuana- only Users	Other Drug Users		
Weekly Cigarette Usage								
None	Female	47.7	242	64.5	20.2	15.3	1.870	10.490*
	Male	44.2	552	63.4	23.9	12.7		
Less than 1 pack	Female	6.7	34	44.1	20.6	35.3	3.304	
	Male	5.8	73	53.4	27.4	19.2		
1-3 packs	Female	11.8	60	30.0	36.7	33.3	3.205	
	Male	13.9	174	39.7	25.3	35.1		
4-7 packs	Female	20.3	103	37.9	19.4	42.7	5.174	
	Male	25.8	322	29.8	30.4	39.8		
8+ packs	Female	13.4	68	35.3	22.1	42.6	2.103	
	Male	10.2	127	26.0	22.0	52.0		
Amount of Alcohol Usage in Last 6 Months								
None	Female	18.1	90	80.0	7.8	12.2	5.013	6.720*
	Male	16.5	206	79.1	14.6	6.3		
1 or 2 times	Female	11.4	57	73.7	8.8	17.5	3.983	
	Male	10.3	129	76.7	14.7	8.5		
3 to 9 times	Female	18.1	90	54.4	33.3	12.2	6.720*	
	Male	14.1	177	69.5	19.8	10.7		
10 to 20 times	Female	15.5	77	53/2	32.5	14.3	0.694	
	Male	15.1	189	47.6	36.5	15.9		
20+ times	Female	36.9	184	25.5	23.4	51.1	4.462	
	Male	44.0	550	20.5	30.9	48.5		

^aGender comparisons.

^bUsage comparisons.

*p < .05

Alcohol Usage. Although the response categories are not large enough to examine heavy alcohol consumption, the table does show a strong relationship between alcohol intake and drug usage among recruits of both sexes. Recruits who used alcohol only once or twice in the last 6 months were more likely to be nonusers (females, 74%; males, 77%); and those who used alcohol more than 20 times, to be drug users (females, 75%; males, 80%).

The DEQ also assessed the number of times that female and male recruits had been drunk in the previous year. Results show a wide discrepancy in their replies. As shown in Table 8, men reported significantly higher incidences of drunkenness than women. Almost twice as many men as women reported having been drunk once a week or more often, or once or twice a month. Thus, 45 percent of the men, compared to 25 percent of the women, had become intoxicated more than a few times during the previous year. Examined from the opposite perspective, 44 percent of the female recruits had not been drunk at all during that time period, while less than 30 percent of the men could make that claim. To summarize, the self-reported data show that female recruits consume alcohol as often as their male counterparts, but that they are far less likely to drink excessively.

Table 8

Incidence of Drunkenness in Previous Year,
Female and Male Recruits

Times Drunk in Previous Year	Percentage of Recruits		χ^2
	Males (N = 1252)	Females (N = 498)	
Never drank	7.2	17.0	65.912*
Drank but not enough to get drunk	21.4	34.3	
A few times	26.2	30.5	
Once or twice a month	22.5	12.9	
Once a week or more often	22.7	12.2	

*p < .01

CONCLUSIONS

The survey of preservice drug use among female Navy recruits revealed patterns consistent with those found by Crawford et al. (1976). Indeed, when comparisons were made to the 1975 sample reported by Crawford et al. (1976), more similarities than differences can be noted. Of the 64 statistical tests for sex differences made in this study, only 7 were significant at the .05 level.

Some caution should be introduced before concluding that the incidences of preservice drug usage of male and female recruits are the same. First, two of the seven significant sex differences indicate that fewer female recruits were involved with hallucinogens before entering the Navy, and two others resulted from the greater frequency of male usage of marijuana in combination with other drugs and with the hallucinogen drug category consisting of LSD, STP, and DMT. Second, the data were gathered during 1976 for the women and during 1975 for the men. As reported by Crawford et al., there was a significant increase in the use of marijuana, amphetamines, and barbiturates for male recruits over the 5 years of the study. Thus, it could be inferred that the 1976 female sample is about 1 year behind the 1975 male sample in experiences with illegal drugs.

A very important finding in the research is that there were almost no sex differences in the relationships between drug use and racial or ethnic membership, age, high school grades, level of education, geographic origin, size of hometown, and preservice delinquency. Women currently entering the Navy are older, better students, more highly educated, and less prone to unlawful behavior than men: All of these factors are known to be associated with job effectiveness among male recruits (Plag & Goffman, 1966). The superiority of women on these variables is a function of (1) service regulations that require high aptitude scores and high school diplomas for female applicants (but not for males) and (2) the limited number of billets that females can fill consistent with federal law. Current legislation could amend the statutory restrictions on the utilization of women, thus ending the advantageous ratio of applicants to openings and the selection of only the most highly qualified. Under these circumstances, women may more closely approximate men on the background variables now considered in selection. Should this occur, the proportion of women involved with drugs may rise. There is evidence to suggest, however, that women of lower aptitude may not show any greater predisposition toward drug involvement than those of higher aptitude who are now entering the Navy (see Table 5).

This study has been but a first step in defining the possible drug involvement of female enlisted personnel. Whether or not teenage drug use, which is often experimental, is indicative of continued usage among women is the issue of concern to Navy managers. The question is not how many young adult drug abusers began experimenting with illicit substances in their teens, but what proportion of those young experimenters become adult abusers. The results of the analysis of alcohol usage suggest that women, for social or biological reasons, are less apt to overindulge than are men. This sex difference also may be true of drug abuse.

RECOMMENDATIONS

It is recommended that an investigation be conducted of drug abuse during the first enlistment, using samples of both sexes. Because the military has harsher penalties for such abuse than are usually imposed outside the military, the behavior of Navy personnel may be quite different from their contemporaries in society. This difference could be manifested by:

1. The termination of substance abuse due to a desire to remain in the Navy or as a result of a drug education program.
2. The concealment of substance abuse to avoid detection and presumable discharge.
3. The overt use of drugs to obtain a discharge or treatment.
4. The termination of substance abuse as a result of a Navy intervention program.

Since half of all current Navy enlistees--male and female--admit the preservice use of marijuana, the effect of current Navy policies toward and treatment of drug usage must be determined.

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APPENDIX
DRUG EXPERIENCES QUESTIONNAIRE

BUPERS 5314-38
5314-40

DRUG EXPERIENCES QUESTIONNAIRE

PRIVACY ACT STATEMENT

Under the authority of 57SC301, as reflected in OPNAV Notice 5450 of 17 April 1975, information is requested regarding your experiences and feelings about using drugs. The information will be used for research purposes only. In no case will an individual's response be used in making decisions affecting him personally. You are not required to provide this information; your participation is voluntary.

DIRECTIONS

Place your answers to this questionnaire in Section A of the answer sheet. Please do not write on this form. There are no right or wrong answers. Answer each question honestly.

THIS QUESTIONNAIRE IS ANONYMOUS. THERE IS NO WAY THAT YOU CAN BE IDENTIFIED BECAUSE YOU ARE NOT TO PUT YOUR NAME OR SOCIAL SECURITY NUMBER ON EITHER THE ANSWER SHEET OR THIS BOOKLET.

DRUG EXPERIENCES QUESTIONNAIRE
Form P-6

BUPERS 5314-40

1. To which of these groups do you belong?
 - A. White
 - B. Black
 - C. Chicano or Mexican-American
 - D. Oriental
 - E. Other
 2. How old are you?
 - A. 17 or under
 - B. 18
 - C. 19
 - D. 20
 - E. 21 or older
 3. What was your average grade in school?
 - A. Straight A's or mostly A's
 - B. A's and B's
 - C. B's and C's
 - D. C's and D's
 - E. D's or below
 4. While you were growing up, what part of the U.S. did you primarily live in?
 - A. Washington, Oregon, California, Idaho, Nevada, Montana, Wyoming, Utah, Arizona, Colorado, New Mexico
 - B. Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware
 - C. Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Kentucky, Tennessee, Florida, Georgia, N. Carolina, S. Carolina, Virginia, W. Virginia, Maryland
 - D. N. Dakota, S. Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Ohio, Michigan
 - E. None of the above
 5. What kind of area did you live in just before you entered the service?
 - A. Ranch, farm, or in the country
 - B. Town or small city, less than 25,000
 - C. City of 25,000 to 100,000 people
 - D. City of 100,000 to 500,000 people
 - E. City of over 500,000 people
 6. Have you ever shoplifted or stolen something from a store?
 - A. No
 - B. Yes
 7. Which of the following best describes your educational level?
 - A. 8th grade or lower
 - B. Some high school
 - C. High school graduate
 - D. Some college or junior college graduate
 - E. College graduate or higher
 8. Have you ever been booked in a police station or jail?
 - A. No
 - B. Yes, but only for a drug related offense
 - C. Yes, but only for a drinking offense
 - D. Yes, but not for drugs or drinking
 - E. Yes, for more than one of the above reasons
 9. How many driving tickets (moving violations) have you received in the past two years?
 - A. Don't drive
 - B. None
 - C. 1 or 2
 - D. 3 to 5
 - E. Over 5
 10. How many packs of cigarettes do you usually smoke in a week?
 - A. None--I don't smoke
 - B. Less than a pack
 - C. 1 to 3 packs
 - D. 4 to 7 packs
 - E. 8 or more packs
- The following items are about using drugs during the past six months. For each item, fill in the appropriate circle using this code:
- A - Never used or not used in last 6 months
 - B - 1 or 2 times in last 6 months
 - C - 3 to 9 times in last 6 months
 - D - 10 to 20 times in last 6 months
 - E - Over 20 times in last 6 months
11. Marijuana or hashish
 12. Opium, codeine
 13. LSD, STP, DMT
 14. Barbiturates, "downers," "reds"
 15. ADP, ATP
 16. Amphetamines, pep pills, "uppers," bennies
 17. Peyote, psilocybin, mescaline
 18. Alcohol--beer, wine, hard liquors
 19. Heroin
 20. Cocaine

21. Have you ever used amphetamines (uppers), barbituates (downers), or opium/codeine on a doctor's prescription or orders?
 - A. No
 - B. Yes, in the last six months
 - C. Yes, but not in the last six months
 - D. I don't remember
22. Do you think that the use of marijuana should be legalized?
 - A. Yes
 - B. No
23. I feel that the present penalties against the personal use of marijuana should:
 - A. be made more strict.
 - B. not be changed.
 - C. be the same as a minor driving ticket.
 - D. be eliminated for private use only.
 - E. be eliminated entirely.
24. How many persons do you know here in boot camp who are using marijuana?
 - A. None that I know of
 - B. I've heard some are but don't know for sure
 - C. 1 or 2
 - D. 3 to 5
 - E. Over 5
25. How many persons do you know here in boot camp who would sell you marijuana?
 - A. None that I know of
 - B. 1 or 2
 - C. 3 to 5
 - D. Over 5
26. How many persons do you know here in boot camp who are using nonprescription drugs other than marijuana?
 - A. None that I know of
 - B. I've heard some are but don't know for sure
 - C. 1 or 2
 - D. 3 to 5
 - E. Over 5
27. In the year before you joined the Navy how much beer did you usually drink?
 - A. I never or seldom drank beer
 - B. One or less cans per week
 - C. Two to seven cans per week
 - D. Two to three cans per day
 - E. Four or more cans per day
28. In the year before you joined the Navy how much wine did you drink?
 - A. I never or very seldom drank wine
 - B. One or less glasses per week
 - C. Two to seven glasses per week
 - D. Two to three glasses per day
 - E. Four or more glasses per day
29. In the year before you joined the Navy how many mixed/straight drinks did you drink (made with hard liquor)?
 - A. I never or very seldom drink hard liquor
 - B. One or less drinks per week
 - C. Two or seven drinks per week
 - D. Two or three drinks per day
 - E. Four or more drinks per day
30. In the past year how many times did you get drunk?
 - A. I never drank alcohol
 - B. I drank a few times but not enough to get drunk
 - C. I got drunk a few times over the year
 - D. I got drunk once or twice a month
 - E. I got drunk once a week or more often
31. Have you ever been drunk while at school or on a job?
 - A. No
 - B. Yes
32. Have you ever been high (from drugs) while at school or on a job?
 - A. No
 - B. Yes
33. Do you need help with a drinking problem?
 - A. No
 - B. Yes, but I have not tried to get help
 - C. Yes, and I have tried to get help
34. Do you need help with a drug problem?
 - A. No
 - B. Yes, but I have not tried to get help
 - C. Yes, and I have tried to get help

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Commander, Naval Training Center, San Diego
Commanding Officer, Fleet Combat Training Center, Pacific
Commanding Officer, Fleet Combat Training Center, Pacific (Code 00E)
Commanding Officer, Fleet Training Center, San Diego
Commanding Officer, Fleet Anti-Submarine Warfare Training Center, Pacific
Commanding Officer, Naval Education and Training Program Development Center (2)
Commanding Officer, Naval Development and Training Center (Code 0120)
Commanding Officer, Naval Aerospace Medical Institute (Library Code 12) (2)
Commanding Officer, Manpower and Material Analysis Center, Atlantic
Commanding Officer, Manpower and Material Analysis Center, Pacific
Commanding Officer, Naval Health Research Center
Commanding Officer, Naval Aerospace and Regional Medical Center (2)
Commanding Officer, Naval Medical Research Institute, National Naval
Medical Center
Commanding Officer, Naval Medical Research and Development Command
Commanding Officer, Human Resource Management School (20)
Commanding Officer, Human Resource Management Center, Norfolk
Commanding Officer, Human Resource Management Center, Pearl Harbor
Commanding Officer, Human Resource Management Center, San Diego
Commanding Officer, Human Resource Management Center, Washington, DC
Commanding Officer, Naval Technical Training Center, Pensacola (Code 01E)
Commanding Officer, Recruit Training Command, Orlando
Commanding Officer, Navy Environmental Health Center
Officer in Charge, Human Resource Management Detachment, Alameda
Officer in Charge, Human Resource Management Detachment, Charleston
Officer in Charge, Human Resource Management Detachment, Mayport
Officer in Charge, Human Resource Management Detachment, Memphis

Officer in Charge, Human Resource Management Detachment, Naples
Officer in Charge, Human Resource Management Detachment, New London
Officer in Charge, Human Resource Management Detachment, Rota
Officer in Charge, Human Resource Management Detachment, Subic
Officer in Charge, Human Resource Management Detachment, Whidbey Island
Officer in Charge, Human Resource Management Detachment, Yokosuka
Director, Training Analysis and Evaluation Group (TAEG)
Master Chief Petty Officer of the Force, U.S. Atlantic Fleet
Master Chief Petty Officer of the Force, U.S. Pacific Fleet
Master Chief Petty Officer of the Force, Naval Material Command (NMAT OOC)
Master Chief Petty Officer of the Force, Naval Education and Training
Command (Code 003)
Personnel Research Division, Air Force Human Resources Laboratory (AFSC),
Brooks Air Force Base
Occupational Manpower Research Division, Air Force Human Resources
Laboratory (AFSC), Brooks Air Force Base
Technical Library, Air Force Human Resources Laboratory (AFSC),
Brooks Air Force Base
Flying Training Division, Air Force Human Resources Laboratory,
Williams Air Force Base
Technical Training Division, Air Force Human Resources Laboratory,
Lowry Air Force Base
Advanced Systems Division, Air Force Human Resources Laboratory,
Wright-Patterson Air Force Base
Program Manager, Life Science Directorate, Air Force Office of Scientific
Research (AFSC) (4)
Army Research Institute for the Behavioral and Social Sciences
Human Resources Development Division, U.S. Army Personnel and Administration
Combat Developments Activity
Military Assistant for Training and Personnel Technology, Office of the
Under Secretary of Defense for Research and Engineering
Director for Acquisition and Planning OASD(MRA&L)
Commandant, Industrial College of the Armed Forces
Center for Naval Analyses
Superintendent, U.S. Naval Academy
Superintendent, U.S. Military Academy
Superintendent, U.S. Coast Guard Academy
Superintendent, Naval Postgraduate School
President, Navy War College
Army War College
Air War College
National War College
Headquarters, U.S. Air Force (AFMPC/DFMYAR), Randolph Air Force Base
Human Resource Development Directorate, AFDP, Pentagon
Headquarters, Department of the Army, Office of the Deputy Chief of Staff
for Personnel
Director of Military Personnel Management, Department of the Army
Coast Guard Headquarters (G-P-1/62)
Defense Documentation Center (12)